

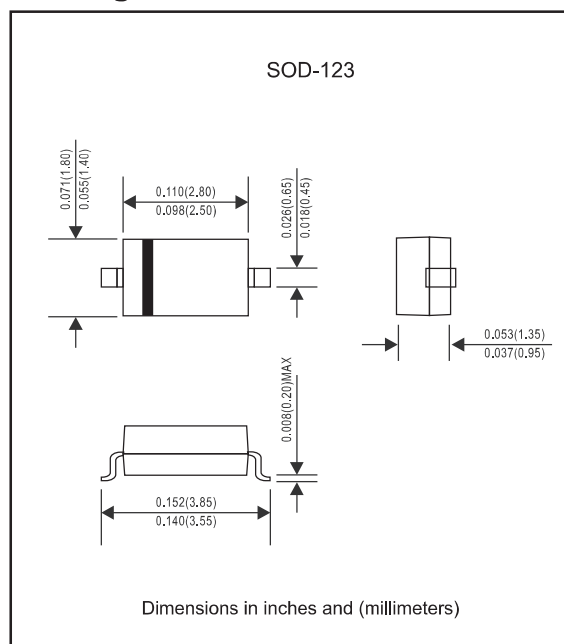


## FEATURES

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Also Available in Lead Free Version

## MARKING:SD

## Package outline



## Maximum Ratings @Ta=25°C

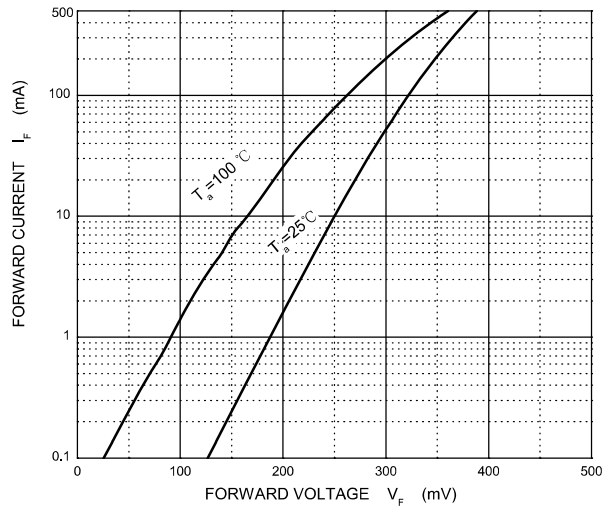
| Parameter                                          | Symbol          | Value      | Unit |
|----------------------------------------------------|-----------------|------------|------|
| Peak repetitive peak reverse voltage               | $V_{RRM}$       | 20         | V    |
| Working peak reverse voltage                       | $V_{RWM}$       |            |      |
| DC blocking voltage                                | $V_R$           |            |      |
| RMS reverse voltage reverse voltage (DC)           | $V_{R(RMS)}$    | 14         | V    |
| Average rectified output current                   | $I_o$           | 0.5        | A    |
| Non-repetitive Peak Forward Surge Current @t=8.3ms | $I_{FSM}$       | 5.5        | A    |
| Power dissipation                                  | $P_D$           | 500        | mW   |
| Thermal resistance junction to ambient             | $R_{\theta JA}$ | 200        | °C/W |
| Operating Junction Temperature Range               | $T_j$           | -40 ~ +125 | °C   |
| Storage Temperature Range                          | $T_{STG}$       | -55 ~ +150 | °C   |
| Voltage rate of change                             | dv/dt           | 1000       | V/μs |

## Electrical Characteristics @Ta=25°C

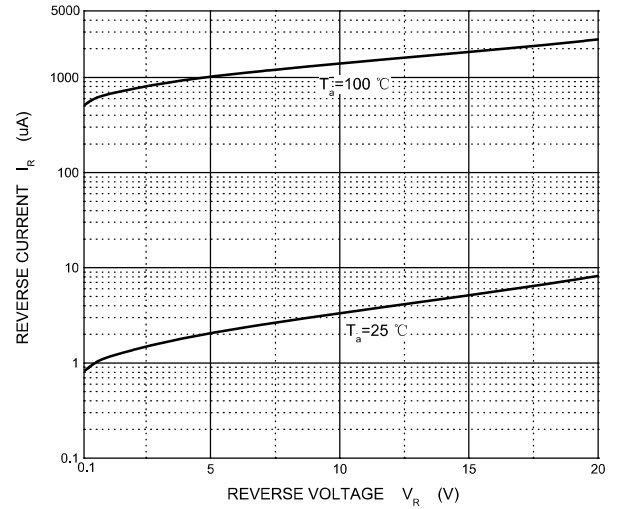
|                               | Symbol     | Test conditions  | Min | Typ | Max  | Unit |
|-------------------------------|------------|------------------|-----|-----|------|------|
| Reverse breakdown voltage     | $V_{(BR)}$ | $I_R=250\mu A$   | 20  |     |      | V    |
| Reverse current               | $I_R$      | $V_R=10V$        |     |     | 75   | μA   |
|                               |            | $V_R=20V$        |     |     | 250  |      |
| Forward voltage               | $V_F$      | $I_F=0.1A$       |     |     | 0.33 | V    |
|                               |            | $I_F=0.5A$       |     |     | 0.39 |      |
| Capacitance between terminals | $C_T$      | $V_R=1V, f=1MHz$ |     | 170 |      | pF   |

## Typical Characteristics

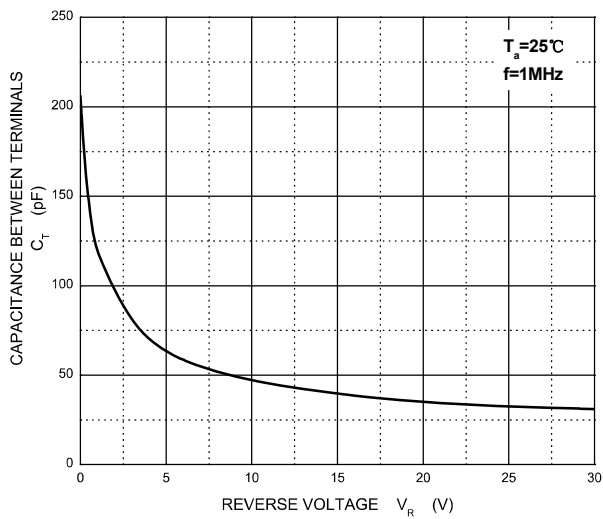
**Forward Characteristics**



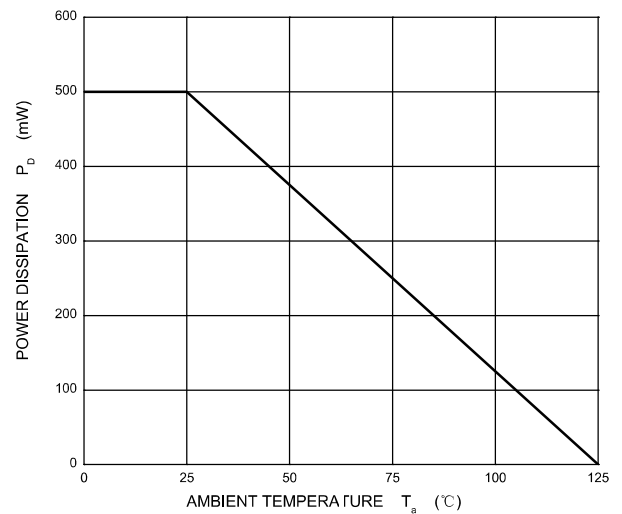
**Reverse Characteristics**



**Capacitance Characteristics**



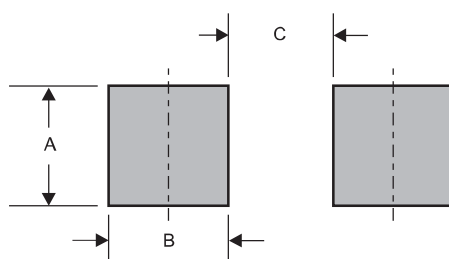
**Power Derating Curve**



## Pinning information

| Pin                        | Simplified outline                                                                | Symbol                                                                              |
|----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Pin1 cathode<br>Pin2 anode |  |  |

## Suggested solder pad layout

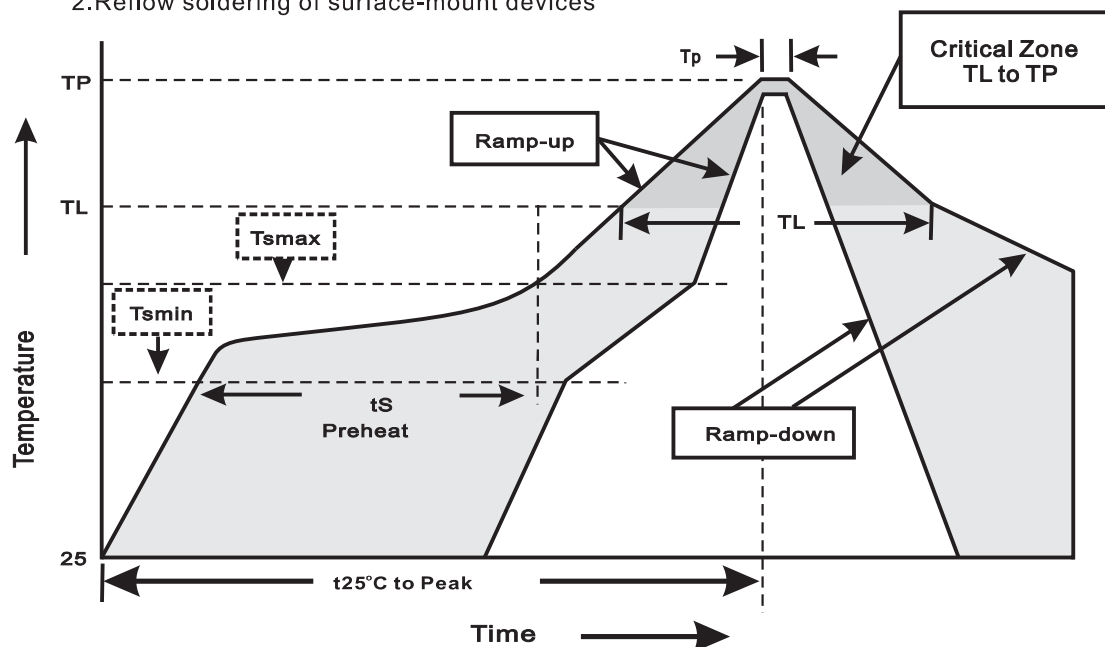


Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SOD-123 | 0.048 (1.22) | 0.036 (0.91) | 0.093 (2.36) |

## Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



### 3.Reflow soldering

| Profile Feature                                                                                                               | Soldering Condition         |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Average ramp-up rate(T <sub>L</sub> to T <sub>P</sub> )                                                                       | <3°C/sec                    |
| Preheat<br>-Temperature Min(T <sub>smín</sub> )<br>-Temperature Max(T <sub>smáx</sub> )<br>-Time(min to max)(t <sub>s</sub> ) | 150°C<br>200°C<br>60~120sec |
| T <sub>smáx</sub> to T <sub>L</sub><br>-Ramp-upRate                                                                           | <3°C/sec                    |
| Time maintained above:<br>-Temperature(T <sub>L</sub> )<br>-Time(t <sub>L</sub> )                                             | 217°C<br>60~260sec          |
| Peak Temperature(T <sub>P</sub> )                                                                                             | 255°C-0/+5°C                |
| Time within 5°C of actual Peak Temperature(t <sub>P</sub> )                                                                   | 10~30sec                    |
| Ramp-down Rate                                                                                                                | <6°C/sec                    |
| Time 25°C to Peak Temperature                                                                                                 | <6minutes                   |